ISRCTN27615323 https://doi.org/10.1186/ISRCTN27615323

Cardiopulmonary exercise testing before and after blood transfusion

Submission date
28/12/2010

Recruitment status
No longer recruiting

Registration date
05/04/2011

Overall study status
Completed

Last Edited
22/02/2019

Condition category
Haematological Disorders

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

Contact name
Dr Jonathan Wallis

Contact details
Department of Haematology
Freeman Road Hospital
Freeman Road
Newcastle upon Tyne
United Kingdom
NE7 7DN

Additional identifiers

Protocol serial number
5563

Study information

Scientific Title
Cardiopulmonary exercise testing before and after blood transfusion: a prospective clinical study

Study objectives

That a blood transfusion has no effect on a patient's ability to exercise as judged by Cardio-Pulmonary Exercise Testing (CPX) testing.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Not provided at time of registration

Study design
Single-centre prospective clinical study

Primary study design
Interventional

Study type(s)
Other

Health condition(s) or problem(s) studied
Anaemia

Interventions
Blood transfusion:
1. We are investigating anaemic haematology patients and determining their exercise capacity before and after transfusion by means of cardio-pulmonary exercise testing
2. Each patient will undergo exercise testing twice before transfusion (1-3 days before and on the day of transfusion) and once afterwards (3-5 days after)
3. A blood sample to check Hb concentration will be undertaken at the time of each test
4. Comparing the results of tests one and two will allow us to determine the intra-patient variability of the test in this population, while comparing tests two and three will allow us determine the physiological effects of transfusion

Intervention Type
Other

Phase
Not Specified

Primary outcome(s)
The change in anaerobic threshold following blood transfusion

Key secondary outcome(s))
1. The change in AT per unit (g/dL) change in Hb concentration will be determined to correct for the variable change in Hb seen with blood transfusion
2. Changes in other CPX variables following transfusion, including peak VO2, OEUS (Oxygen Efficiency Utilisation Slope), Ve/VCO2 ratio, VO2/HR ratio and Respiratory Exchange Ratio (RER)
3. Intra-patient variability in the AT measured by CPX testing will be expressed as the coefficient of variation

Completion date

01/08/2011

Eligibility

Key inclusion criteria
1. Patients requiring blood transfusion under the care of the haematology team
2. Patients over the age of 18 years
3. Capacity to give informed consent
4. Comprehension of English
5. Ability to undertake CPX testing using a cycle ergometer

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
All

Key exclusion criteria
1. A requirement to have an urgent blood transfusion as judged by the haematologist caring for the patient. (This would not allow sufficient time to undertake proper consent and perform CPX tests one and two).
2. Ongoing active bleeding
3. Those who get angina or intermittent claudication on moderate exercise or who have shortness of breath at rest
4. Patients who have a significant acute medical illness
5. Those with other contraindications to exercise testing according to the ACC/AHA Exercise Testing Guidelines or our own local guidelines

Date of first enrolment
01/02/2011

Date of final enrolment
01/08/2011

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Department of Haematology
Newcastle upon Tyne
United Kingdom
NE7 7DN

Sponsor information

Organisation
Royal Victoria Infirmary Newcastle (UK)

ROR
https://ror.org/01p19k166

Funder(s)

Funder type
Research organisation

Funder Name
Transfusion and Red Cell Fund TPA007 (UK)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/07/2014	22/02/2019	Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes